

4-8 Dilations

$$A(0,0)$$

$$B(1,4)$$

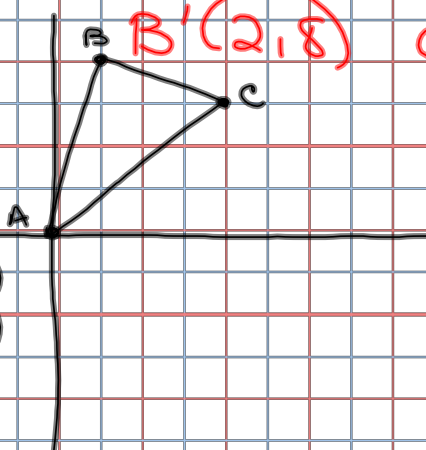
$$C(4,3)$$

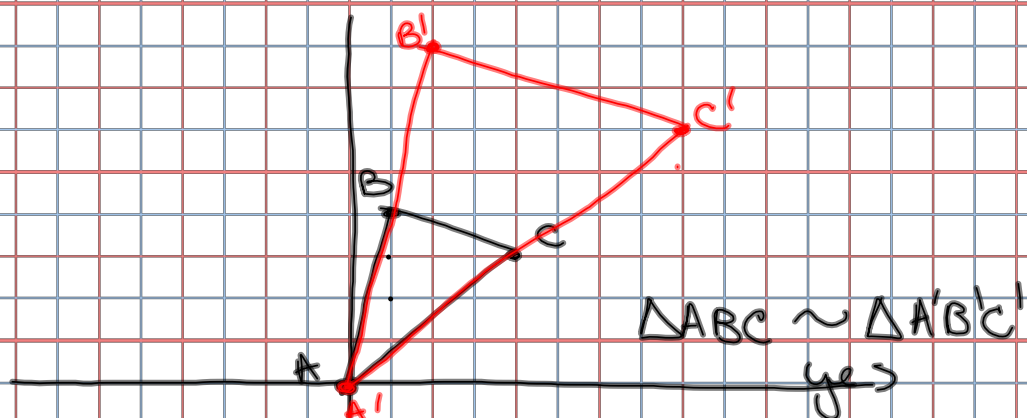
$$A'(0,0)$$

$$B'(2,8)$$

$$C'(8,6)$$

Multiply the (coordinate)
by 2
means $(x \cdot 2 \text{ and } y \cdot 2)$
 $(2x \text{ and } 2y)$





Similar :

- corresponding angles are congruent
- corresponding sides are proportional

Dilation
enlarging or reducing

Reduction
Scale factor $0 < k < 1$

Enlargement
Scale factor $k > 1$

Congruent \cong
Scale factor $= 1$
Same shape

$$V(-2, 2) \quad V'(-5, 5)$$

x coordinates

$$\frac{\text{prime}}{\text{original}} \quad \frac{-5}{-2} = \frac{5}{2} = 2.5 > 1$$

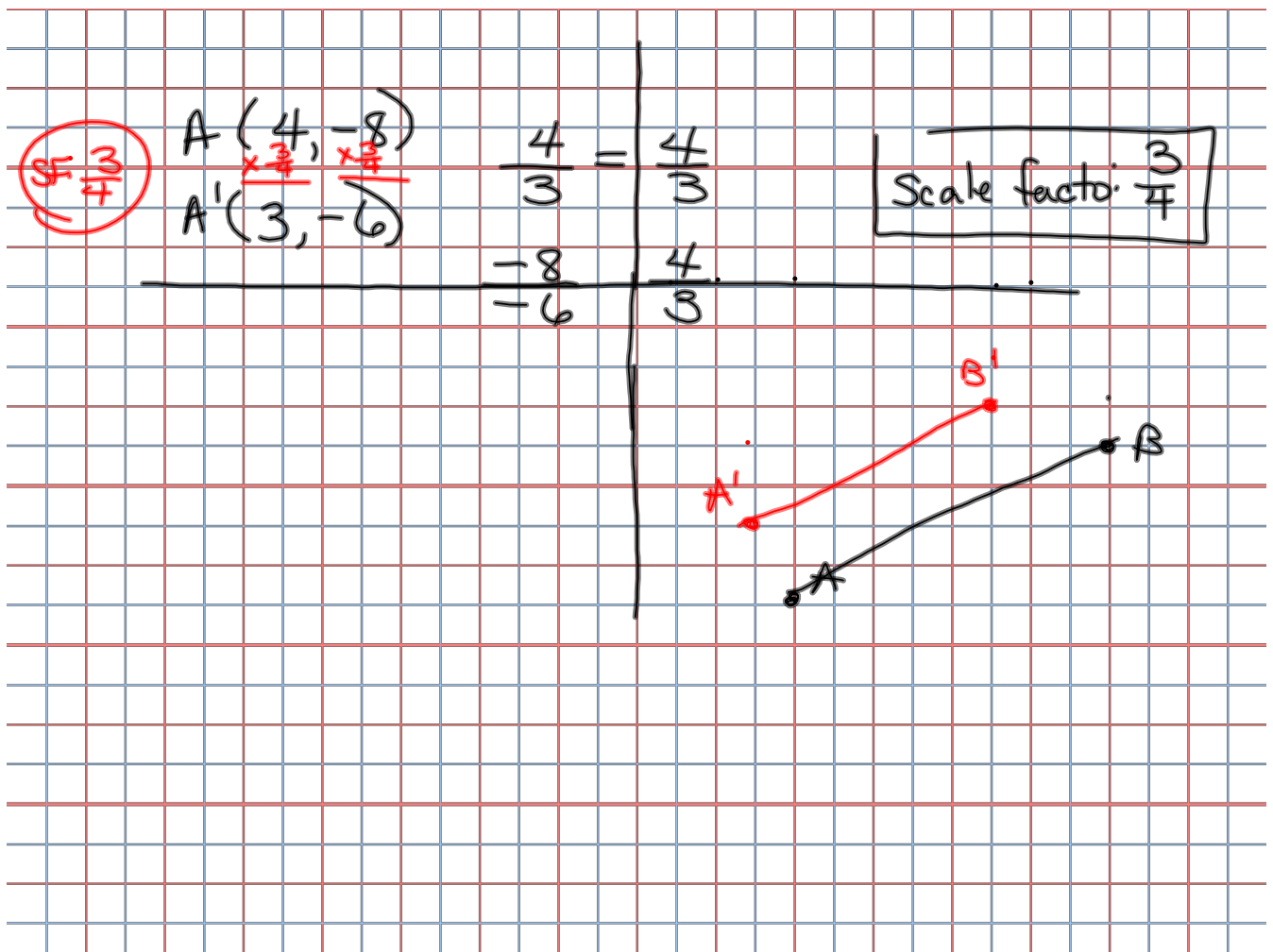
y coordinates

$$\frac{5}{2} = \frac{5}{2} = 2.5 > 1$$

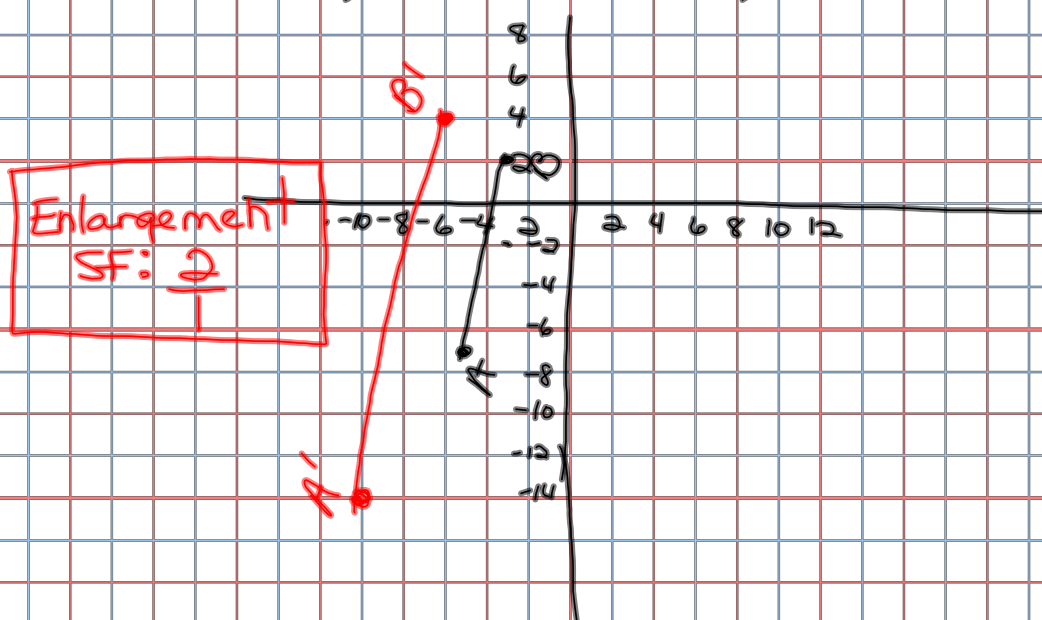
Enlargement

$$\frac{2}{5}$$

$$\frac{5}{2}$$



d) $A(-5, -7)$ $B(-3, 2)$
 $A'(-10, -14)$ $B'(-6, 4)$



$x = \text{dilation}$

$$\frac{\boxed{x}}{5\text{mm}} = \frac{5}{3} \quad x = 8.\overline{3}$$

$$20.) \quad \begin{array}{l} (1, 1) \\ \times 2.5 \quad \times 2.5 \\ \hline (2.5, 2.5) \end{array} \qquad \begin{array}{l} (0, 2) \\ \times 2.5 \quad \times 2.5 \\ \hline (0, 5) \end{array}$$

Scale factor

$\frac{5}{2}$ Enlargement

